U.S. Patent Application Serial No. 09/351,544

Declaration of Timothy K. Carns

Document B

FROM WFN0055 REV. 27
SPECIAL TEST REQUEST FORM
Electronic Version

ISSUE DATE:
MAINTAINED BY: ICS Nampa
UPDATE FREQUENCY: BY CN

FIGURE 1
SPECIAL TEST REQUEST

STR APPROVAL#: 834 STR SN#: 9700737 DEVICE: 87L02A A R 4107
PURPOSE: TO ELIMINATE CAPACITOR LEAKAGE
DATE: ORIGINATOR: LEE DEBRULER gdb
LOT #: TBD D1549
PROCESS FLOW: Z37223 MARKETABLE: Y PRODUCTION REJECTABLE: N
IMPACT ON DPW YLD.: IMPROVE

*** WAFER PROBE DISPOSITION INSTRUCTIONS ***

[S] SEND LOT ON AS STANDARD PRODUCTION

[X] Process Eval Tests - Non-Standard
(Any Test Program or Test Temperature Changes Require an STWR)
*** NON-STANDARD PROCESS REQUIREMENTS AND HOLD POINTS ***

LOCATION	MASK LEVEL	LOC. NAME
0		MULTI-OPER

PROCESS PER ATTACHED RUNCARD
USE UNRELEASED MASK SET FOR Z87L02A

APPROVALS

QA DIR : D. Nuremberg/email DATE:
PLANNING REP : S. Veltrop DATE:
PRODUCT ENG.MGR: Steve Schalter/email DATE:
PROD MGR: DATE:

FAB OPER MGR : DATE:
TD MGR**: DATE:
ENG.MGR: J. Espos.to/email DATE:
PAT1 MGR: DATE:
* REQUIRES PAT1 MGR SIGNITURE
(FOR WAFER PROBE OR MOD2 PEVAL)
** TD MGR APPROVAL FOR TD STRs

87L02A CAPACITOR OXIDE ETCH SPLITS

Wafer #	Capacitor Oxide	Capacitor Oxide Etch	L40 Expo Split	L40 Etch	L50 Etch	Hook
1,11	Thermal	BOE	Yes	D1114	D1114	D1114 wf# 2
2,12	Thermal	BOE	Yes	GOLD	D1114	
3,13	Thermal	Horvath	Yes	Z7223L40	Horvath	
4,14, 21	Thermal	Horvath	No	Z7223L40	Horvath	
5,15, 22	Thermal	Horvath	No	Z7223L40	Horvath	
6,16	Novellus	BOE	Yes	D1114	D1114	D1114 wf# 4
7,17	Novellus	BOE	Yes	GOLD	D1114	
8,18	Novellus	Horvath	Yes	Z7223L40	Horvath	
9,19, 23	Novellus	Horvath	No	Z7223L40	Horvath	
10,20, 24,25	Novellus	Horvath	No	Z7223L40	Horvath	

Z37223 TECHNOLOGY UPDATE oo/jsmy/dacock SHEET 1 OF 30

LOT # D1549 DEVICE : _____

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
30	WAFER START	WF31500						25	—	10839
	LASER SCRIBE	WF37030	LAS01	LASER SCRIBE				25	—	10839
	CLEAN	WF33030	FCL0X	CLEAN			STARTS	25	—	10839
	PARTICLE COUNT	WF36051	PCT01	PC	<30 LPD@0.2 um	PC 3	BARE20	25	—	10839
	DIFF LENGTH	WF36055	SDI01	DIFFUSION LENGTH IRON	> 350 um <9e10 atoms/cm2	DL MEAN 555 Fe 33 e10		25	—	10839
35	CLEAN	WF33020	DCL0X	CLEAN		4-F	NOSIP-OX	25		10892
	NOSIP OXIDATION	WF33015	TVF01 HVF0X4	OXIDATION			100NOSIP	25		10702 11639
	PARTICLE COUNTS	WF36051	PCT01	PC	<30 LPD@0.3 um	PC 2	SIO2-300	25		11639
	THICKNESS MEAS.	WF33050	ELP01	TOX	100 +/- 20 ANG	TOX MEAN 101.73 WFR RANGE 3.322	NOSIP OX	25		11637
37	1ST NITRIDE DEP	WF33015	NVF0X	NVF01			NITRIDE	25		11568
	PARTICLE COUNT	WF33015 WF36051	PCT01	PC	<150 LPD@0.3 um	PC 43	NITRIDE30	25		11568
	THICKNESS AND RI MEASUREMENT	WF33015 WF33050	ELP01	TNIT	1500+/-150 ANG	TNIT MEAN 1519 WFR RANGE 63	1ST-NITRIDE-Z70	25		11568
		WF33015 WF33050	ELP01	RI	2.027+/-0.03	RI MEAN 2.027	1ST-NITRIDE-Z70	25		11568

2185

Z37223 TECHNOLOGY UPDATE oo/jsmy/dacock

LOT # D1549 DEVICE : 8702HK4197

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
0095 L10 S/D MASK	ENGINEERING TO PROCESS – FIRST EXPOSE *									10760
	COAT	WF34005	DNS0X				#3	25		10961
	ALIGN	WF34004	I4 ONLY EXPO9		CH	RETICLE # ~~#10370~~ 111280	I4: 1600/0	25		10961
	DEVELOP	WF34005	DNS0X				#3	25		10361
	DICD	WF33430	SEM0X	DICD DENSE	0.80 +/- 0.08	MEAN .8006 3SIG .0391	[illegible]	25		
	DEVELOP INSPECT	WF34025	INS0X1	VISUAL DEFECTS	NONE		#19 *K# W28	28		10894

~~Not~~ Ran ~~AO~~ ~~mac~~ CQ

Z37223 TECHNOLOGY

LOT #01549 DEVICE : Z86 UPDATE! nmoo/jsmy/dacock Z87L02AAR4107

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
	* ETCH USING NITRIDE ETCH SYSTEM *									
99	NOSI ETCH NITRIDE	WF35050	PET0X			WFR #_____ & _____	P_Z7nitride	25		11101 12:20
	OXIDE REMAINING	WF33050	ELP0X	TOX REMAINING	70 +/- 15 ANG.	TOX MEAN 73.3 RANGE 6.6	NOSI-Nitride	25		10485
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			25		62
	* ETCH USING POLY ETCH SYSTEM *									
101	NOSI ETCH TRENCH	WF35050	PET0X			WFR #_____	P_Z7trench	25		11101
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			25		11132
	DRY STRIP	WF35030/ WF35035	MAS0X ASH0X		Endpoint 17		ASH	25		11132
	FSI STRIP	WF33030	RST0X		RST02		RESIST-STRIP (C)	25		11164
	STEP HEIGHT	WF35000	OLY01	STEP HEIGHT	0.23 +/- 0.023 um	MEAN .2262 3SIG .0119		25		11132 11551
	FICD	WF33430	SEM0X	FICD	0.75+/-0.08	MEAN .7651 3SIG .0334		25		11132
	FINAL INSPECT	WF31025	INS0X	POLYMER	NONE			25		11326

...DATED ...noo/jsmy/dacock

LOT # Y·71 DEVICE : Z87L02AHKT101

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
	CLEAN	WF33020	DCL0X				STEAM-OX	25		11639
							5KSTEAM	25		11639
102	STEAM OX	WF33015	TVF01			TOX MEAN 3006	STEAM-OX	25		10896
	THICKNESS MEAS.	WF33015 WF33040	PUV0X	TOX	5000+/-500 ANG.	RANGE 97				
	NITRIDE STRIP	WF33020	NST01				NITRIDE STRIP	25		11575
104	OXIDE REMOVED	WF33020 WF33050	ELP01	OX REMOVED	+10 OR -90 ANG.	REMAINING OX 60	NIT STRIP	25		10702
		WF31025	INS0X	RES. NITRD W. RIBBON	NONE			25		10702
	CLEAN	WF33020	DCL0X				RIBBON-OX	25		11167
106	RIBBON OX	WF33015	HVF0X				300OXIDE	25		11639
	THICKNESS MEAS.	WF33015 WF33050	ELP01	TOX	300 +/- 30 ANG.	TOX MEAN 303 WFR RANGE 4	RIBBON-OX	25		10154
	COAT	WF34005	DNS09				#5	25		10200
	ALIGN	WF34004	I4 ONLY EXPO9			RETICLE # 110390	I4: 3150 / 0.0	1		1
	DEVELOP	WF34005	DNS09				#5	1		1
109	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN .0361 R .0633 YMN .0134 R .0844	04/01	25		10644
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		10120
	DICD	WF33430	SEM0X	DICD LOWER ISO	1.00 +/- 0.10	MEAN 1.0558 3SIG .1188		25		11357 #6/4
	UV BAKE	WF34015	DUV0X				L14L17	25		11357

LOT # 01549 DEVICE : Z87209AHP4/07

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
112	P-WELL CHAIN IMPLANTS (1,2,3)	IMPLANT CONDITIONS: PWELL 1 - 1.00E13, 700KEV, 1.3 TWIST, 2.5 TILT, 11B+								
		IMPLANT CONDITIONS: PWELL 2 - 3.00E12, 400KEV, 1.3 TWIST, 2.5 TILT, 11B+								
		IMPLANT CONDITIONS: PWELL 3 - 6.30E12, 180KEV, 1.3 TWIST, 2.5 TILT, 11B+								
		WF33000	IMP04 ONLY				HADES	25		10886
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 654.8 UNF .93		25		10886
113	PWELL 4 & PWELL VT CHAIN IMPLANTS	IMPLANT CONDITIONS: PWELL 4 - 6.80E12, 45KEV, 1.5 TWIST, 5.0 TILT, 11B+								
		IMPLANT CONDITIONS: PWELL VT - 1.00E12, 10KEV, 1.5 TWIST, 5.0 TILT, 11B+								
		WF33000	IMP~~0X~~ 03				TINKERBELL	25		10886
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 745.6 UNF .44		25		10886
L4 122	DRY STRIP	WF35030 WF35035	MAS0X ASH0X			END PT TIME 62 COMPLETE TIME ~~2300~~	ASH	25		10436
	FSI STRIP	WF33030	RST0X				RESIST-STRIP	25		10436
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			25		10436
L17 160	COAT	WF34005	DNS09				#5	25		11633
	ALIGN	WF34004	I4 ONLY EXPO9			RETICLE # 110400	I4: 2960 / 0	25		11633
	DEVELOP	WF34005	DNS09				#5	25		11633
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN -.0656 R .0123 3SIG YMN -.0248 R .6372		25		11395
	DEVELOP INSPECT	WF34025	INS0X 01	VISUAL DEFECTS	NONE			25		11633
	DICD	WF33430	SEM0X 03	DICD LOWER ISO	1.00 +/- 0.10	MEAN 1.069 3SIG .026	#15 demo3	25		11633
	UV BAKE	WF34015	DUV0X 01				L14L17	25		11395

LOT # D1549 DEVICE : Z87L-02 HAK4107

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
162	N-WELL CHAIN IMPLANT (I, II, III)	IMPLANT CONDITIONS: NWELL 1 - 1.0E13, 1400KEV, 1.0 TWIST, 2.0 TILT, 31P+								
		IMPLANT CONDITIONS: NWELL 2 - 6.3E12, 530KEV, 1.0 TWIST, 2.0 TILT, 31P+								
		IMPLANT CONDITIONS: NWELL 3 - 6.8E12, 230KEV, 1.5 TWIST, 5.0 TILT, 31P+								
		WF33000	IMP04 ONLY				QUASIMODO	25		10559
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 1581.0 UNF 0.56		25		11124
387	NWELL VT IMPLANT	IMPLANT CONDITIONS: NWELL VT - 5.1E12, 65KEV, 1.5 TWIST, 5.0 TILT, 49BF2+								
		WF33000	IMP0X			imp02	JETSAM	25		10559
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 1622.8 UNF .94		25		10559
388	DRY STRIP	WF35030 WF35035	MASOX ASH0X		RM03	END PT TIME COMPLETE TIME	ASH	25		10559
	FSI STRIP	WF33030	RST0X				RESIST-STRIP	25		10894
	FINAL INSPECT	WF31025	INS0X3	VISUAL DEFECTS	NONE			25		10894
392	CLEAN(NO HF)	WF33030 WF33020	FCL0X DCL0X				BEECLEAN	25		11537
	WELL ANNEAL	WF33015	TVF01 HVF06				WELANNEL	25		11479

85 / 1625

Z37223 TECHNOLOGY UPDATED mmoo/jsmy/dacock

LOT # D1549 DEVICE : 287L02AAR4/07

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
394	CLEAN/OXIDE STRIP	WF33020	DCL0X	0			OXIDE	25		JH
	Z70 GATE	WF33015	TVF01 HVF06				64THINOX	25		JH
	THICKNESS MEAS.	WF33015 WF33050	ELP01	TOX	64 +/- 5 ANG.	TOX 63.3 WFR RANGE 1.4	Z70 GATE	25		10131
398	GATE RTP	WF33010	RTP01				sleepy.1	25		10894
	THICKNESS MEAS.	WF33010 WF33050	ELP01	TOX	70 +/- 5 ANG.	TOX 69.5 WFR RANGE 2.1	Z70 GATE	25		10894
425	*****DIRECT TRANSFER TO AMORPHOUS SI DEPOSITION*****									
	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS		PRE COUNT D	KLA + Dis. Inp. w.#13 Pac [illegible]	25		10154
	AMORPHOUS SI DEP	WF33015	PVF03 ✓				AMORPH ✓	25		10154
	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS	<200 PC'S ADDED	POST COUNT 17 PC DELTA 17		25		11407
	THICKNESS MEAS.	WF33040	PUV0X	TPOLY	3750+/-250 ANG.	TPOLY MEAN 3690 RANGE 4	Z70 AMOR SI	25		11407

3690
4

LOT # D1549 DEVICE : 87c02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
444	POLY IMPLANT	IMPLANT CONDITIONS: 1.5E16, 60KEV, 7 DEG, 31P+, E-SHWR=20X								
		WF33000	IMP0X	IMP 01			ROQUEFORT	25		11686
485	CAPPING OX DEP	WF32000	NOV0X			NOV02-Lowman	~~LOWMAN~~	25		11398
490	AMOR RTP	WF33010	RTP0X				dopey:1	25		11682
494	FSI DEGLAZE	WF33030	FCL0X FCL01				AMOROX	25		10657
	SHEET RHO MEAS.	WF33020 WF36010	RNC01	SHEET RHO	21.5 - 41.5 OHMS/SQ.	RS MEAN 2845 RANGE 4.09	AMOR RTP	25		10702

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
	SPLIT LOT INTO TWO GROUPS FOR CAPACITOR OXIDE									
	WAFER SPLITS NEED TO COMPLETE CAP OXIDE DEPOSITION AND CAP OXIDATION AT THE SAME TIME									
GROUP #1: WAFERS 6 - 10, 16 - 20, 23 - 25 Verified Jim Sheu										
	*** HOLD FOR JIM SHEU TO PROCESS ***									
600	TARGET 375 A END OF LINE (DEPOSITED OXIDE SAME AS D1114)									
	CAPACITOR OXIDE DEPOSITION	WF33015	NOV03			Z3570X	Z375OX	13		11555
	THICKNESS MEAS.	WF33040	PUV0X			378 Å (Test wfr.)				11555
GROUP #2: WAFERS 1 - 5, 11 - 15, 21, 22 Work TO Verification Done - MRN 1655 Hrs.										
	*** HOLD FOR MIN HUANG TO PROCESS ***									
600	TARGET 375 A END OF LINE (THERMAL OXIDE SAME AS D1114)									
	CAPACITOR OXIDE	WF33015	AVF01				ZCAP425	12		10150
	THICKNESS MEAS.	WF33040	PUV0X		Wafer #13	370.85	CAP-OX	12		11338
	* RECOMBINE ALL WAFERS PRIOR TO AMORPHOUS DEPOSITION *									

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
	***** DIRECT TRANSFER TO AMORPHOUS SI DEPOSITION ***** ***PRECLEAN NOT REQUIRED***									
610	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS	WAFER # 16 KLAlocation + READ #'S	PRE COUNT 200		25		11219
	AMORPHOUS SI DEP	WF33015	PVF03				2000AMOR	25		11219
	PARTICLE COUNTS	WF35040	KLA01	PARTICLE COUNTS	<150 PC'S ADDED	POST COUNT 75 PC DELTA 0		25		11575
	THICKNESS MEAS.	WF33040	PUV0X	TPOLY	2000+/-250 ANG	TPOLY MEAN 1960 RANGE 4	Z70 AMOR	25		11576
615	CAP POLY IMPLANT	IMPLANT CONDITIONS: 1.0E16, 30KEV, 7 DEG, 31P+, E-SHWR=180mA								
		WF33000	IMP0X	in 0221	out 0418	IMP01	6223_phoscap	25		11585
620	RTP Amor	WF33010	RTP0X				dopey.1	25		10774 (05:20) 0630
622	DEGLAZE	WF33020	DCL0X				DEGLAZE	25		10702
0625 L39 CAP POLY MASK	*** TO PROCESS ***									
	COAT	WF34005	DNS0X				TBD	25		11357
	ALIGN	WF34004	I4 ONLY EXP0X			RETICLE #110420	TBD			
	DEVELOP	WF34005	DNS0X				TBD			
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.14 to 0.14	XMN -.0119 R .0349 YMN .0007 R .0406		25		11357
	DICD	WF33430	SEM0X	DICD		MEAN .834 3SIG .073	#01	25		11357
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		10705

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN

SPLIT LOT INTO TWO GROUPS FOR CAP POLY ETCH

BOE ETCH (SAME AS D1114)

GROUP #1: 1, 2, 6, 7, 11, 12, 16, 17

	***** HOLD FOR JOHN HORVATH TO ETCH *****								
	*** Z70 L40 ETCH ADJUSTED FOR 2000 ANGSTROM THICKNESS AND NO PEARL ***								
0630 CAP POLY ETCH	CAP POLY ETCH	WF35050	PET0X			WFR # 14 & 13	z-amorphous	8	
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			8	
	DRY STRIP	WF35030/5	MAS0X				ASH	8	
	IPO REMOVAL	WF33030	FCL0X				ZCAPOFF	8	10982
	FICD	WF33430	SEM0X	FICD	0.96 +/- 0.12	MEAN .816 3SIG .075	#07	8	10146
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE		#02	8	10146

Hold for Deb Acock.

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN

NON BOE ETCH (WAFERS DO NOT RECEIVE IPO REMOVAL STEP)

GROUP #2: 3 - 5, 8 - 10, 13 - 15, 18 - 25

	***** HOLD FOR JOHN HORVATH TO ETCH *****									
	*** Z70 L40 ETCH ADJUSTED FOR 2000 ANGSTROM THICKNESS AND NO PEARL ***									
0630 CAP POLY ETCH	CAP POLY ETCH	WF35050	PET0X			WFR # 14 & 13	z-amorphous	17		
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			17		
	DRY STRIP	WF35030/5	MAS0X				ASH	17		
	FSI STRIP #1	WF33030	RST0X				RESIST-STRIP	17		
	OXIDE REMAINING	WF35050 WF33040	PUV0X	OX REMAIN	300 +/- 100 A REMAIN	AVG 317 & 317 SDEV 2.3 & 4.1	#13, #25	17		10146
	FICD	WF33430	SEM0X	FICD	0.96 +/- 0.12	MEAN .850 3SIG .091	#13	17		10146
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE		#13, #24	17		10146

RECOMBINE WAFERS PRIOR TO PEARL DEPOSITION

Z37223 TECHNOLOGY UPDATE: mmoo/jsmy/dacock SHEET 13 OF 30

LOT # D1549 DEVICE : 87L02AAK7.07

4431

25

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
					*** BRETT LOWE TO PROCESS *** Release 3#					1112 NOT Ran
650	PEARL DEP	WF32000	NOVO3				EAGLE	25		
	REFLECTIVITY	WF33040	PUV0X	PRODUCT REFLECTIVITY	0.04 TO 0.07	REFLECTIVITY .0667	PEARL REFLECTIVITY	25		1112 Measure Wafer # 1,2,11,or 12
	THICKNESS MEAS.	WF32000/ WF33040	ELP01	TEST WAFER OXYTK	360 +/- 40 A	MEAN 3516 SIGMA 5.67	PEARL	25		11402

HOLD FOR ENGINEERING TO PROCESS (S.BUFFAT/ J.ADAMS/ S.LARSON)

HOLD FOR REVIEW OF DICD TARGETTING. DO NOT PROCESS W/OUT JSMY/CARNS APPROVAL JSMY

WAFERS 1 - 3, 6 - 8, 11 - 13, 16 - 18 TO RECEIVE BY ROW EXPOSURE SPLITS

(NOTE WAFERS 3 - 5, 8 - 10, 13 - 15, 18 - 25 HAVE PEARL AND OXIDE OVER POLY 1)

0795 L40	COAT	WF34005	DNS09	EXPOSE	17/13		#3	25		11357
	ALIGN	WF34004	I4 ONLY EXPO9		EXPOSURE ____	RETICLE # 110520	I4: TBD / 0.2			
	DEVELOP	WF34005	DNS09				#3			
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.15 TO +0.15	XMN .033 -.299 YMN -.005 -.482		25		11357
	DICD	WF33430	SEM0X	DICD	0.44 +/- 0.03	MEAN .427 3SIG .071	I4	25		11357
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		11357

D1549

Job Name : 1287L02A11539.job

DECORATION

87L02A
wfr map

diameter = 200.00+-2.50 mm

Row	EXP SETTING	DICO5 w68 #17	DICO8 w?? #18
1	A	.457	.450
2	B	.441	.459
3	C	.371	.363
4	D	.320	.310
5	A	.473	.462
6	B	.429	.428
7	C	.376	.352
8	D	.320	.299
9	A	.477	.494
10	B	.393	.359

INITIALS CARNS/SMYTHE

EXPOSURES

A 1500 .472
B 1650 .425
C 1975 .377
D 2290 .32

11-12

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN

SPLIT LOT INTO THREE GROUPS FOR L40 ETCH

HOLD FOR JOHN HORVATH TO ETCH

GROUP #1: 1, 6, 11, 16 ✓

	WAFERS TO RECEIVE SAME ETCH AS D1114 (P_SMALL_POLY RECIPE W/ LOW O2 IN O.E.)								
0796 L40 ETCH	POLY ETCH	WF35050	PET0X Ø2			WFR # Ø1	P-Small_Poly TBD	4	JF
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			4	JF
	DRY STRIP	WF35030/5	MAS0X ASH0X Ø2				ASH	4	10146
	FSI STRIP #1	WF33030	RST0X			RSTU1	RESIST-STRIP	4	11044
	FSI STRIP #2	WF33030	RST0X				RESIST-STRIP Ø1	4	10923 JF
	OXIDE REMAINING	WF35050 WF33040	PUV0X	OX REMAIN	L10-50 N+ BOX 20 - 70 A REMAIN	OX REMAIN 430 & SDEV & 3.60	L40 POLY ETCH	4	11072
	FICD	WF33430	SEM0X	FICD LOWER ISO	0.45 +/- 0.04	MEAN .065 .069 3SIG	HOLD	4	11072 call Engr
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			4	11072

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
				HOLD FOR JOHN HORVATH TO ETCH						
GROUP #2: 2, 7, 12, 17 ✓										
0796 L40 ETCH	WAFERS TO RECEIVE IMPROVED L40 ETCH (P_SMALL_POLY)									
	POLY ETCH	WF35050	PET0X Ø2			WFR # Ø2	TBD Z-7223-L40-working	4		
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			4		
	DRY STRIP	WF35030/5	MAS0X ASH0X Ø2				ASH	4		
	FSI STRIP #1	WF33030	RST0X			RST01	RESIST-STRIP	4		
	FSI STRIP #2	WF33030	RST0X				RESIST-STRIP	4		
	OXIDE REMAINING	WF35050 WF33040	PUV0X	OX REMAIN	L10-50 N+ BOX 20 - 70 A REMAIN	~~OX~~ REMAIN 64.8 SDEV 8	L40 POLY ETCH	4		
	FICD	WF33430	SEM0X	FICD LOWER ISO	0.45 +/- 0.04	MEAN .471 3SIG .038		4		
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			4		

LOT #D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN

HOLD FOR JOHN HORVATH TO ETCH

WAFERS TO RECEIVEIMPROVED ETCH (W/WAFFLES) AND OXIDE ETCH

wafers split

GROUP #3: 3 - 5, 8 - 10, 13 - 15, 18 - 25

WAFERS TO RECEIVE IMPROVED L40 ETCH (P_SMALL_POLY)

0796 L40 ETCH	POLY ETCH	WF35050	PET0X			WFR # 03	TBD Z-7223-L40IPOX	17		
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			17		
	DRY STRIP	WF35030/5	MAS0X ASH0X 02				ASH	17	10144	
	FSI STRIP #1	WF33030	RST0X			RST01	RESIST-STRIP	17	10144	
	FSI STRIP #2	WF33030	RST0X				RESIST-STRIP	17	10923	
	OXIDE REMAINING	WF35050 WF33040	PUV0X	OX REMAIN	L10-50 N+ BOX 20 - 70 A REMAIN	OX REMAIN 602.06 & SDEV & 2.58	L40 POLY ETCH	17	11072	
	FICD	WF33430	SEM0X	FICD LOWER ISO	0.45 +/- 0.04	MEAN .439 3SIG .029 #04		17	11072	
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			17	11072	

RECOMBINE WAFERS PRIOR TO GRAND OXIDATION

Z37223 TECHNOLOGY UPDATED: moo/jsmy/dacock SHEET 17 OF 30

LOT # D1549 DEVICE : 87L02AAR4107

25

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
803	CLEAN	WF33030 WF33020	FCL0X DCL0X				BEECLEAN	25		11219
	GRAND OXIDATION	WF33015	AVF03				GRANDOX	25		11639
	THICKNESS MEAS.	WF33015 WF33040	PUV0X	TOX	L10-50 N+ BOX 60 +/- 25 A REMAIN	TOX MN 165.K WFR RNG 11.92	GRAND OX	25		11639
809 L40.9 P-LDD MASK	COAT	WF34005	DNS0X			110380	#1	25		11361
	ALIGN	WF34000/ WF34004	EXP0X			RETICLE #_____	I2: 200/0.1 I4: 2000/0.1	25		11361
	DEVELOP	WF34005	DNS0X				#1	25		11361
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.24 TO 0.24	XMN 0171 R 0148 YMN -0202 R 0282				
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		10961
	PREIMPLANT BAKE	WF34015	DUV0X				IMPLANT	25		11573
811	P-LDD IMPLANT	IMPLANT CONDITIONS: P-LDD 1.6E14, 45KEV, 11 DEG QUAD, 49BF2+								
		WF33000	IMP01		32 1155	Imp01	FROLLO	25		11044
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 2943.7 UNF 3.00 END PT. TIME_____		25		10071
820	DRY STRIP	WF35030 WF35035	ASH0X MASOX	ASH02		COMPLETE TIME	ASH	25		10071
	FSI STRIP	WF33030	RST0X	in 1305	out 1345	RST01	RESIST-STRIP	25		10185
	FINAL INSPECT	WF31025	INS0X	POLYMER DEFECTS	NONE		INS 04	25		10185

Z37223 TECHNOLOGY UPDATE1 nmoo/jsmy/dacock SHEET 18 OF 30

LOT # D1549 / DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
854	N-LDD IMPLANT	IMPLANT CONDITIONS: N-LDD 6.5E13, 20KEV, 11 DEG QUAD, 31P+								
		WF33000	IMP01	TW 1445	OET 1601	IMP (1)	ESMERALDA	25		1018 25
	THERMAWAVE	WF36050	TWU01	TWU	981.8	TWU MEAN UNF 0.44		25		11124
857	LDD SPACER DEP CLEAN (NO HF)	WF33030 WF33020	FCL0X DCLOX	FCL02			BEECLEAN	25		10716
865	Z70 SPACER	WF32000	NOV01				BANKS (MACRO)	25		11250
	THICKNESS MEAS.	WF32000 WF33040	PUV02 (PUV02)	TEOS	1500 +/- 150 A	FOX DELTA 1469 % SIG 2.00	Z70 SPACER	25		11250
867	Z70 SPACER ETCH	WF35055	OET0X				P_Z7_SPACER	25		11589
	POST FOX MEAS.	WF35055 WF33040	PUVOX	Purge * Calib #1	FOX DELTA 350 +/- 200 A	FOX DELTA 191 RANGE 91	Z70 SPACER ETCH	25		11072
	FINAL INSPECT	WF31025	INS0X	VISUAL				25		11664
875	SPACER RTP	WF33010	RTP0X				bashful.1	25		11585

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
900 L41 N+ S/D MASK	COAT	WF34005	DNS0X				#1	25		11361
	ALIGN	WF34000/4	EXP0X			RETICLE # 10430	I2: 240/0.1 I4: 2400 / 0.1	25		11361
	DEVELOP	WF34005	DNS0X				#1	25		11361
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.24 TO 0.24	XMN .0371 R .0557 YMN -.0624 R .0699		25		10818
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		10818
	PREIMPLANT BAKE	WF34015	DUV0X				IMPLANT	25		10818
930	N+ S/D IMPLANT	IMPLANT CONDITIONS: 1.0E15, 80 KEV, 5 DEG QUAD, 75As+, E-SHWR 40mA								
		WF33000	IMP0X			Imp01	RUFUS	25		11044
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 11682.4 UNF 1.66 ~~END PT. TIME 26~~		25		11044 * MSC
933	DRY STRIP	WF35030 WF35035	MAS0X ASH0X		1200 out	COMPLETE TIME 1230	ASH 03	25		11044
	FSI STRIP	WF33030	RST0X	~~1330~~ 1330			RESIST-STRIP 01	25		10165
	FINAL INSPECT	WF31025	INS0X	POLYMER DEFECTS	NONE	Insp04		25		10071

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
960 L42 P+ S/D MASK	COAT	WF34005	DNS0X	CHK09			#1	25		10717
	ALIGN	WF34000 WF34004	EXP0X	↓		RETICLE # 11640	I2: 220/0.1 I4: 2200 / 0.1	↓		↓
	DEVELOP	WF34005	DNS0X	↓			#1	↓		↓
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.24 TO 0.24	XMN .0498 R .0091 YMN .0114 R .0331		25		10961
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25		11344
	PREIMPLANT BAKE	WF34015	DUV0X				IMPLANT	25		11361
962	P+ S/D IMPLANT	IMPLANT CONDITIONS: 1.0E15, 50KEV, 5 DEG QUAD, 49BF2+, E-SHWR 40mA								
		WF33000	IMP0X			Imp03	MCLEACH	25		10774 2147
	THERMAWAVE	WF36050	TWU01	TWU		TWU MEAN 20537 UNF .14 ~~END PT. TIME~~ COMPLETE TIME 23 2230		25		10774
963	DRY STRIP	WF35030 WF35035	MAS0X ASH0X				ASH	25		10774
	FSI STRIP	WF33030	RST0X				RESIST-STRIP	25		11585
	FINAL INSPECT	WF31025	INS0X	POLYMER DEFECTS	NONE			25		11585

Z37223 TECHNOLOGY UPDATED ...noo/jsmy/dacock SHEET 21 OF 30

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
974	CLEAN(NO HF)	WF33030 WF33020	FCL0X DCL0X			FCLØ1	BEECLEAN	25		11219
	N2 LATTICE CURE	WF33015	AVF0X				LATTICE	25		11639
985	THICKNESS MEAS.	WF33040	PUV0X	(bpsg-1)	puvØ1		BPSGT DEP(pm)	25		10894
	BPSG-I	WF32000	NOV0X	bpsg-1	(1000 TEOS) (9000 BPSG)		CHALLIS (MACRO)	25		10894
	THICKNESS MEAS.	WF32000/ WF33040	PUV0X	TBPSG *	post 13,570 to 1.128 10000 +/- 550 A no pre meas. taken.	SLOT#___ TBPSG AFTER___ %STD___	BPSG I DEP(post)	25	12/14	? 10894
1000	RTP I Ddensification	WF33010	RTP0X				grumpy.1	05	12/14	10559
1005	BPSG I CMP	WF35095	COP01				MARBLE32 WFR_CLN_OX	25	12-15	10141
	THICKNESS MEAS.	WF33040	PUV0X	OX REMOVED	SLM08/SLM 6000 +/- 800 A	MP1 DELTA___ MP1 STD___ MP2 DELTA___ MP2 STD___ MP3 DELTA 6800 MP3 STD___ MP4 DELTA 6500 MP4 STD___	POST BPSG I CMP	25	12-15	10141
	FINAL INSPECT	WF31025	INS0X		NONE			25	12-15	10141
1010	BPSG-II	WF32900	NOV0X				HAILEY (MACRO)	25	12/15	10894
	THICKNESS MEAS.	WF32000/ WF33040	PUV0X	TBPSG	3000 +/- 400 A	SLOT# 13 TBPSG AFTER 2847 %STD 440	POST BPSG II	25	12/15	10280
1015	2ND RTP DENSE	WF33010	RTP0X			RTP01	sneezy.1	25	12/15	10559

* NO pre taken post replicates previous lot of data Tsan 12/14/98

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1095 L50 CONT MASK	COAT	WF34005	DNS0X				#6	25	12/15	10229 11504
	ALIGN	WF34004	I4 ONLY EXPOX09			RETICLE # 110500	I4: 4700 / 0.25	25	12/15	10229 11504
	DEVELOP	WF34005	DNS0X				#6	25	12/15	10229 11504
	KLA5011	WF35000	OLY01	OVERLAY	-0.15 TO 0.15	XMN -.0144 R .0744 YMN -.0521 R .1163		25	12/15	11395
	DICD	WF33430	SEM0X03	DICD	0.41 +/- 0.08	MEAN .4125 3SIG .1041		25	12/15	11395
	DEVELOP INSPECT	WF34025	INS0X	VISUAL INSPECT	NONE			25	12/15	11685
1100	HOLD FOR JOHN HORVATH TO ETCH									
	NOTE: WAFERS 3 - 5, 8 - 10, 13 - 15, 18 - 25 HAVE PEARL AND OXIDE ON POLY 1									
	CONTACT ETCH	WF35055	OET05				P_Z7_contact	25	12/18	10146
	ETCH INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			25	12/18	10589
	DRY STRIP	WF35030/ WF35035	ASH0X MAS0X				ASH 04	25	12/18	10589
	FSI STRIP	WF33030	RST0X				RESIST-STRIP	25	12/18	10589
	FICDS	WF33430	SEM0X	FICD	#130 .45 +/- 0.08	FICD MN .437 3SIG .010	Sem03	25	12/18	10589
	FINAL INSPECT	WF31025	INS0X	VISUAL/ POLYMER	NONE			25	12/18	10672

.450
.437
.13

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1145	****** DO NOT PRECLEAN UNTIL IMP TI IS QUALIFIED ******									
	PREMETAL CLEAN	WF33020	MCL01	VISUAL INSPECT			TIMEOUT	25	12/18	11250
	***** MEASURE FIRST 6 SLOTS *****									
	THICKNESS MEAS.	WF33040	PUV02 PUV0X	Field Area TOX	12000 +/- 2000A	TOX MEAN ____ RANGE ____	PRE W/ CMP (PREPOLISH)	25	12/18	11250
1150	IMP TI	WF32010	SPT02				MULAN	25	12/18	11250
	SHEET RHO MEAS.	WF32010/ WF36000	RSH01	TEST WAFER SHEET RHO	26.3+/-4.6 OHMS/SQ	25.9		25	12/19	11687
1155	CVD TIN DEP	WF32001	NOV08				RED	25	12/19	11687
	THICKNESS MEAS.	WF33050	ELP01	TEST WAFER THICKNESS	230+/-30 ANG.	224	TIN/SI-T,N,K	25	12/19	11687
1175	STUFFING	WF33010	RTP0X				doc.1	25	12/19	11585
1178	W DEP	WF32001	NOV07				GREEN	25	12/19	11687
	THICKNESS MEAS.	WF36000	RSH01	Test Wafer THICKNESS	6500 +/- 500 A	6420	METALS-CVDW 49PT-THICKNESS	25	12/19	11687
1179	W I CMP	WF35090	CTP01				~~RUBYWFR-CLN~~	25	12/19	~~11608~~
	OXIDE REMOVED	WF33040	PUV0X	OX REMOVED	625 +/- 375 A	OX DELTA 764 OX SDEV 56	POST W-I CMP (POST)	25	12/19	11608
	FINAL INSPECT	WF31025	INS0X	VISUAL DEFECTS	NONE			25	12/19	11608

Z37223 TECHNOLOGY UPDATED: nmoo/jsmy/dacock SHEET 24 OF 30

LOT # D4549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1185	M1 ALCU w/ARC	WF32010	SPT0X			SPT #2	BAMBI-CHX	25	12/19	11250
	REFLECTIVITY	WF33040	PUV0X 01	REFLECT.	0.13 +/- 0.05	REFLECT 0.1315 SDEV 6.24	METAL1ALCU	25	12/19	11687
	THICKNESS MEAS.	WF36010	RNC01	THICKNESS	5500 +/- 350	THICK M1 5472 RANGE 2.23	METAL/Z7XXX/M1	25	12/19	11687
1195 L60 M1 MASK	COAT	WF34005	DNS0X				#3	25	12/19	11344
	ALIGN	WF34004	I4 ONLY EXP0X			RETICLE #10470	I4: 2000 / 0.2	↓	↓	↓
	DEVELOP	WF34005	DNS0X				#3	↓	↓	↓
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25	12-20	11573
	PRE-ETCH BAKE	WF34015	DUV0X				METAL	25	12/20	11344
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN.0354 R.0872 YMN-.0151 R.0813		25	12-20	11573
	DICD	WF33430	SEM0X	DICD	0.60 +/- 0.06	MEAN .5610 3SIG .0555	Sem03	25	12-20	11361

Z37223 TECHNOLOGY UPDATED c/jsmy/dacock SHEET 25 OF 30

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1199	METAL 1 ETCH	WF35080	MET0X 2			TW# 13	P-7120-M1	25	12-20	11132
	ETCH INSPECT	WF31025	INS0X	VISUAL/ POLYMER	NONE			25	12/20	11664
1200	EKC MET STRIP	WF35070	MST0X 1				METSTRIP	25	12-20	11132
	FICDS	WF33430	SEM0X	FICD	0.60 +/- 0.08 #13	MEAN .6037 3SIG .022		25	12/20	10589
	FINAL INSPECT	WF31025	INS0X	VISUAL/ POLYMER	NONE			25	12/20	10672

WAFERS GO TO ALLOY FOR POST METAL 1 PEVAL

NOT ON IAY	ALLOY	WF33015	YVF01				ALLOY	25	12/20	10599
NOT ON IAY	PIX DESCUM	WF35035	MASOX (MA502)				DESUM	25	12/21	11551
	PEVAL PER ATTACHED PEVAL TEST REQUEST SHEET									
	PROC EVAL	WF36075	PRB01				Z87L02A_SLM2	25	1-5	11153
1206	THICKNESS MEAS.	WF32000/ WF33040	PUV0X 01		9 pts	MEAN 12742 SDEV 2.1656	PRE HDP IDL (PRE DEP)	25	1-5	10053
	HDP ILD	WF32000	4-Nov				D	25	1-5	10053
	THICKNESS MEAS.	WF32000/ WF33040	PUV0X 01	TTEOS	16000+/- 550 A 9 pts	MEAN 16053 SDEV 1.808	POST HDP IDL (POST DEP)	25	1-5	10053
1208	ILD-I CMP	WF35095	COP01				GRANITE/ WFR_CLN_OX	25	1-6	11502
	OXIDE REMOVED	WF33040	PUV0X	OX REMOVED	7000 +/- 800 A	OX DELTA 6706	POST ILD-I CMP	25	1-6	11502
	FINAL INSPECT	WF31025	INS0X		NONE			25	1-6	11502
1209	PECVD-II DEP	WF32000	NOV0X	NOV02	Moscow	PUV01 "pecvd-2"	MOSCOW (MACRO)	25	1-6	11398
	THICKNESS MEAS.	WF32000/ WF33040	PUV0X	TTEOS	3000 +/- 400 A	MEAN 3065 SDEV 2.6	POST PECVD-II	25	1-6	11398

Wafers Re order 12-20-98

DACO has 1 part o rl

POST MI Peval

SPEC NO. WF36075 REV. 19

FIGURE 24
P-EVAL REQUEST FORM

LOT# D1549 REQUESTOR LOEB DATE

HP TEST NAME Z87L02A-SLM2 EG TEST NAME 87L02AMI

EST.TEST TIME ~~40 min/wfr~~ 1:20 mm SUPERVISOR'S SIGNATURE

PLEASE FILL OUT THE FOLLOWING TABLE AS THE WAFERS ARE TESTED:

WF#	SLOT#	DATE TESTED	START TIME	FILENAME
01	01	12-21	~~0625~~	Strd1549
02	02	12-21	~~0633~~	Strd1549
03	03	12-22	0820	strd1549
04	04	12-22	2330	strd1549
05	05	12-22	2330	strd1549
06	06	12-23	0225	Strd1549
07	07	12-23	0645	strd1549
08	08	12-23	0830	Strd1549
09	09	12-23	0950	strd1549
10	10	12-23	1215	strd1549
11	11	12-23	1450	strd1549
12	12	12-24	0120	strd1549
13	13	12-24	0300	strd1549
14	14	1-3-99	2350	strd1549
15	15	1-4-99	0127 / 0340	strd1549
16	16	1/4/99	0328	strd1549
17	17	1/4/99	0455	~~STRD1~~* STRd1549
18	18	1-4-99	0625	Strd1549
19	19	1-4-99	0755	Strd1549
20	20	1-4-99	1010	strd1549
21	21	1-4-99	1155	strd1549
22	22	1-4-99	~~1330~~	STRD1549 *2315
23	23	1-4-99	2015	STRD1549
24	24	1-5	0110	STRD1549
25	25	1-5	0310	STRD1549

TO BE SUBMITTED TO THE REQUESTING ENGINEER, THEN DISCARDED.
A

tested 12-21 not tested

wafer #15 * time out had rest Rd 1/4

* time again Rd

* did not run #22 at this time - dl

* wrong recipe

LOT #D1549 DEVICE : 87L02AA

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1210 L62 VIA MASK	COAT	WF34005	DNS0X				3	25	1-7	11633
	ALIGN	WF34004	I4 ONLY EXPOX			RETICLE #116480	i4: 4000 / 0.45	25	1-7	11633
	DEVELOP	WF34005	DNS0X				3	25	1-7	11633
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	X .0127 3S .0580 Y .0090 3S .0984		25	1/7	11564
	DICD	WF33430	SEM0X	DICD DENSE	0.48 +/- 0.06	MEAN .492 3 SIGMA .013	#11	25	1-7	11688
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25	1-7	11633
1216	****** USE OXIDE XL ETCHER and ASH on MAS0X ONLY****									
	VIA ETCH	WF35055	OET05				P_Z7_VIA	25	1-7	10884
	OXIDE REMOVED	WF33040	PUV0X	STACK REMOVED	28000 +/- 5000A	OX REMOVED 25842	L62 VIA ETCH (POST)	25	1-7	10672
	ETCH INSPECT	WF31025	INS0X 2	VISUAL DEFECTS	NONE			25	1-7	11101
	DRY STRIP	WF35035	MAS0X ONLY		*** MAS0X ONLY ***	END PT. TIME 41820 COMPLETE TIME 1000	Z7_L62	25	1/7	10708
1217	SEMITOOL	WF35070	MST0X			MAS0X	METSTRIP	25	1/7	10879
	FICDS	WF33430	SEM0X	FICD DENSE	0.50 +/- 0.08	FICD MEAN .518 3SIG .035	.500/.035	25	1/7	11702
	FINAL INSPECT	WF31025	INS0X 2	VISUAL/ POLYMER	NONE			25	1/7	11101

LOT # D1549 DEVICE : 87L02AA

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
	****** MEASURE FIRST 6 SLOTS ******									
1233	THICKNESS MEAS.	WF33040	PUV0X	Field Area TOX	30000 +/- 5000A		PRE WII CMP (PREPOLISH) (A)	25	1-8-99	10774
	RF/IMP TI	WF32010	SPT02			SPT02	Rafiki	25	1-8	10888
1234	CVD TIN DEP	WF32001	NOV08			NOV08	RED	25	1-8	10299
1235	W II DEP	WF32001	NOV07			NOV07	GREEN	25	1/8	11608
1236	W II CMP	WF35090	CTP01				GARNET / WFR-CLN	25	1/8	10141
	OXIDE REMOVED	WF33020 WF33040	PUV0X	OX REMOVED	625 +/- 375	MP1 Delta 485 MP1 STD 41 MP2 Delta 489 MP2 STD 38 MP3 Delta 460 MP3 STD 40 MP4 Delta 435 MP4 STD 24	POST W-II CMP (POST) (A)	25	1/9	11589
	FINAL INSPECT	WF31025	INS0X		NONE			25	1/9/99	11589
1237	METAL 2 DEP	WF32010	SPT0X				Flit-CH3/4	25	1/9/94	11690
	REFLECTIVITY	WF33040	PUV0X	PRODUCT REFLECT.	0.13 +/- 0.05	REFLECT 1413 SDEV ~~1.310~~ 7.77	METAL II ALCU	—	1/9	10888
	THICKNESS MEAS.	WF36010	RNC01	STACK THICK	8000 +/- 650	AL THICK 8 240 1.828	METAL / Z7XXX / M2	—	1/9	10888

(A) measure on recipe in Short loops/Eng - ROB - D1549 puv02

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1240 L65 M2 MASK	COAT	WF34005	DNS0X			Exp 09	#3	25	1-9	10818
	ALIGN	WF34004	I4 ONLY EXP0X			RETICLE # 110450	I4: 2000 / 0.2	↓	↓	↓
	DEVELOP	WF34005	DNS0X			Exp 09	#3	↓	↓	↓
	PRE-ETCH BAKE	WF34015	DUV0X			DUV 01	METAL	25	1/9	11608
	KLA5011	WF35000	OLY01	OVERLAY (um)	-0.20 TO 0.20	XMN .0132 R .0670 YMN .0273 R .1018		25	1-9	10232
	DICD	WF33430	SEM0X	DICD LOWER ISO	0.60 +/- 0.06 (*)	MEAN .5773 3SIG .0478	~~#13 - SLOT 13~~	25	1-9	11672
	DEVELOP INSPECT	WF34025	INS0X	VISUAL DEFECTS	NONE			25	1-9	INS 01

SLOT #09 : .5773
: .2788

(*) wfr # 23
mean = .541
3sig = .0305

Z37223 TECHNOLOGY UPDATED :moo/jsmy/dacock SHEET 29 OF 30

LOT # D1549 DEVICE : 87L02

X METOI NR 1/9/99

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1243	METAL 2 ETCH	WF35080	~~METOX~~ MET0X			TW #____	P_7120_M2	25	1/10	11551
	ETCH INSPECT	WF35080	INS0X	VISUAL/ POLYMER	NONE			25	1/10	10788
1245	EKC MET STRIP	WF35070	MST0X			metstrip	METSTRIP 01	25	1/10	10589
	FICDS	WF33430	SEM0X	FICD LOWER ISO	0.60 +/- 0.08	MEAN 0.620 3SIG 0.085	SEM03	25	1/10	10708
	FINAL INSPECT	WF31025	INS0X	VISUAL/ DEFECTS	NONE			25	1/10	10788
1290	PASSIVATION	WF32000	NOV0X				ARCO (MACRO)	25	1-10	10774
	STACK THICKNESS	WF32000/ WF33040	PUV0X		10000+/-1275		PASSIVATION	25		
1295 L70 PAD MASK	PIX COAT	WF34010	PIX01				26	25	1-10	11761
	RESIST COAT	WF34005	DNS0X				#7	25	1-10	11573
	ALIGN	WF34000/4	EXP0X			RETICLE # 11046 0	I2: 390/0 I4:3900/0	25	1-10	11361
	DEVELOP	WF34005	DNS0X				#7	25	1-10	11573
	ACETONE STRIP	WF35070	MST03				Acetone	25	1-10	11344
	PIX INSPECT	WF34025	INS0X					25	1-10	11072
	PIX CURE	WF34010	PIX01				32	25	1-10	10961
1300 L70 ETCH	PAD ETCH	WF35055	OET0X			OET03	P_PAD_Etch	25	1/11	11664
	FINAL INSPECT	WF31025	OET0X					25	1-11	11326
1310	ALLOY	WF33015	YVF01				ALLOY	25	1/11	11568

LOT # D1549 DEVICE : 87L02

LOC	PROCESS	SPEC #	TOOL	PARAMETER	SPEC. WINDOW	ACTUAL	RECIPE	QTY	DATE	SIGN
1339	PIX DESCUM	WF35035	MAS0X D1				DESCUM	25	1-11	11055
	PEVAL PER ATTACHED PEVAL TEST REQUEST SHEET									
	PROC EVAL	WF36075	PRB01	SLM			87L02A_SLM	25	1-16	10672
1500	SHIP	WF37000						25	1-16	10577

Re-Etch OET01 – Z.7120_RE-ETCH (30 Seconds)

EOL PEVAL

FIGURE 24
P-EVAL REQUEST FORM

LOT# D1549 REQUESTOR LOEB DATE

HP TEST NAME 87L02A_SLM EG TEST NAME 87L02A MZ

EST.TEST TIME ~~40 min/WF~~ 1:10 SUPERVISOR'S SIGNATURE DBrunnett

PLEASE FILL OUT THE FOLLOWING TABLE AS THE WAFERS ARE TESTED:

WF#	SLOT#	DATE TESTED	START TIME	FILENAME	
Pls retest → 01	1	1-13-99	~~2355~~ 2005	~~STF D1549~~ Tdzd1549	~~THEY 2230~~
02	2	1-12-99	2005	~~EDIT 1-13-99 ABORTED / RETEST STF D1549~~ tdzd1549	~~START 0000 ABORTED NOT TESTED?~~
03	3	1-14-99	0110	Tdzd1549	
04	4	1-14	0220	Tdzd1549	
05	5	1-14	0335	Tdzd1549	
06	6	1-14	0450	Tdzd1549	
07	7	1-14	1445	tdzd1549	
08	8	1-14	1630	tdzd1549	
09	9	1-15	0620	tdzd1549	
10	10	1-15	0820	Tdzd1549	
~~11~~					
~~12~~					
13	13	1-15	1020	Tdzd1549	
#14	14	~~1-15~~ 1-16 Dec	~~1730~~ 0300	~~tdzd1549~~ } tdzd1549	"didn't"
#15	15	~~1-16~~ 1-16 Dec	~~1730~~ 0400	~~tdzd1549~~ } Not done TO 1/15/98	
~~16~~					
~~17~~					
18	18	1-16-99	0750	Tdzd1549	didn't print out
19	19	1-16-99	1000	tdzd1549	didn't print out
20	20	1-16-99	1215	Tdzd1549	didn't print out
~~21~~					
~~22~~					
~~23~~					
~~24~~					
~~25~~					

TO BE SUBMITTED TO THE REQUESTING ENGINEER, THEN DISCARDED.
A

NOTE:
Please call Files For This "tdzd1549"

#needs done

WF# 14, 15, 18, 19, + 20 did not print out -